



Accelerating investments in Renewable Energy, Energy Efficiency & Smart Mobility in the Pacific Islands

Webinar Series | Agenda

Webinar 2: Energy Efficiency: A lens on Energy Service Companies (ESCO) models within the context of the Pacific Island Countries

[Recording here](#) (appears 24 hours after webinar ends)

22 September 2020 | 95 minutes | 7AM (CEST), 3PM (Australia & PNG), 4PM (Solomon Islands), 5PM (Fiji, New Zealand)

Topic	Speaker	Time (min)
Welcome	Dr. Mike Hopkins, CEO, CEP NZ	5
Online poll	-	5
Introduction by the European Union and the NZ Ministry of Foreign Affairs and Trade	- Ms. Erja Askola, Deputy Head of Delegation, Delegation of the European Union for the Pacific - Mr. Paul Alexander, Unit Manager Infrastructure, Energy and Transport, Pacific and Development Group, NZ Ministry of Foreign Affairs and Trade	10
Setting the scene: Creating a pipeline of energy efficiency innovative projects to support PIC's NDCs	Mr. Vincent Guinaudeau, Senior Green Investment Specialist, GGGI	10
ElectriFI Pacific Window: A flexible blended finance facility	Mr. Quentin De Hoe, Sr. Investment Officer, ElectriFI	10
Introducing GET.invest: Examples from GET.invest portfolio	Mr. Paul van Aalst, GET.invest Finance Catalyst Advisor	10
Regional efforts and experiences	Mr. Bruce Clay, Founder & General Manager, Clay Energy. President, the Sustainable Energy Industry Association of the Pacific Islands (SEIAPI) Mr. Solomon Fifita, Manager, Pacific Centre for Renewable Energy and Energy Efficiency (PCREEE) Mr. Trevor Nash, Consulting Services Manager, Energy Solution Providers Ltd (ESP) Mr. Len George, Asia Development Bank (ADB)	20
Q&A	-	20
Evaluation online poll	-	-
Conclusion	Mr. Jesse Benjaman, Programme Delivery Officer, PCREEE	5





REGIONAL
PACIFIC
NDC HUB

Energy Efficiency Project Pipeline in Pacific Island Countries

Vincent Guinaudeau – Senior Green
Investment Specialist

22nd September 2020



The Pacific NDC Hub supports PICS to enhance & implement their NDCs

15 Members & Steering Committee

PNG Tonga Kiribati Fiji Solomon Is.
 Tuvalu Nauru Niue Tokelau Cook Is.
 Samoa Vanuatu FSM Marshall Is. Palau

Four funders of the NDC Hub

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Regional Pacific NDC Hub Activities

Partners & Implementation Unit

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
 Lead Partner

Pacific Community
 Communauté du Pacifique

GGGI

SPREP
 Secretariat of the Pacific Regional Environment Programme

NDC Hub Implementation Unit

Partners & Implementation Unit

1. NDC Review and Enhancement
2. NDC implementation: roadmaps, investment plans, project pipelines
3. NDC monitoring
4. Knowledge sharing

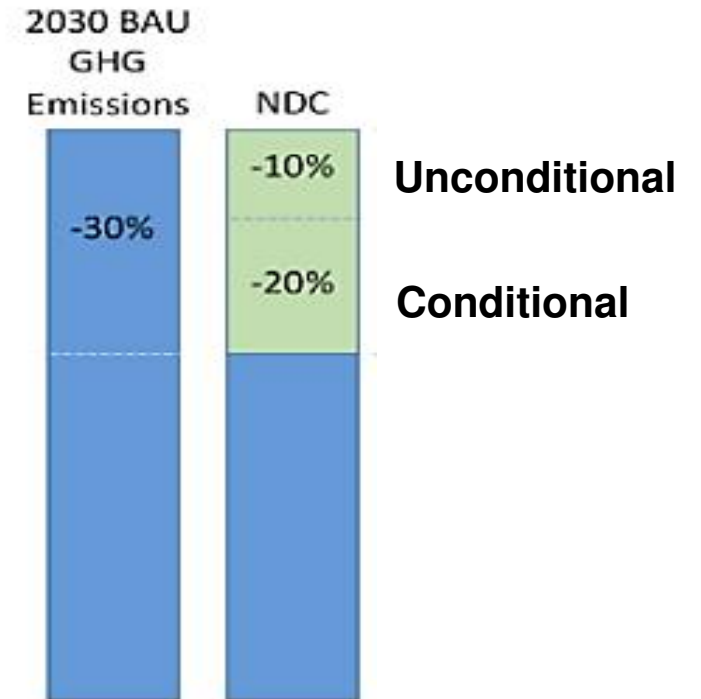
- Fiji
- Kiribati
- Tuvalu
- Samoa
- Tonga

Members of the Steering Committee, representing the 3 Pacific sub-regions Melanesia, Micronesia and Polynesia & Fiji as host country. The steering committee supervises the progress of the NDC Hub and provides guidance & directions.

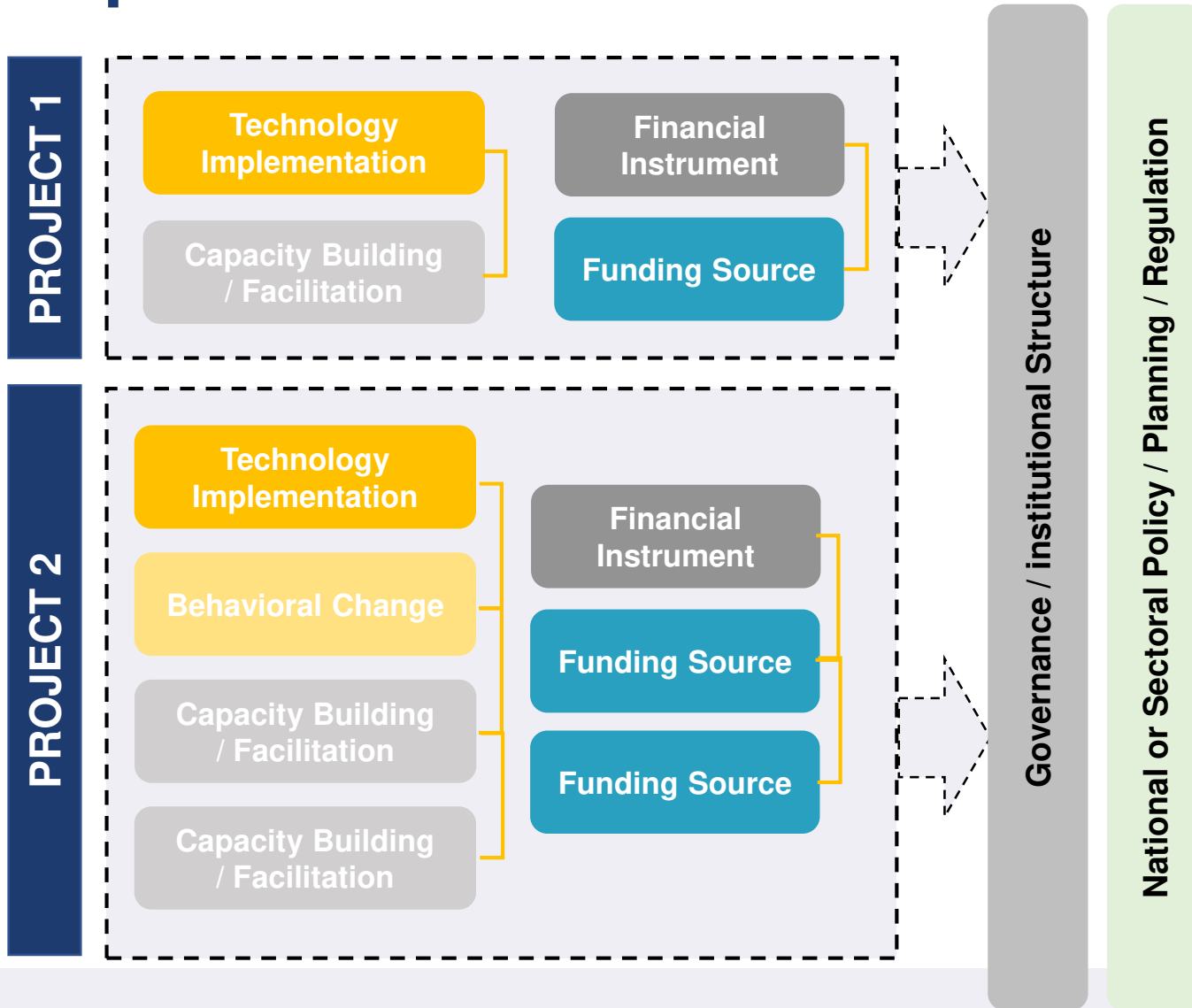
What are the Nationally Determined Contributions?



Example of Fiji's 1st NDC:



NDC Investment Plan & Project Pipeline in Energy Efficiency: Explained



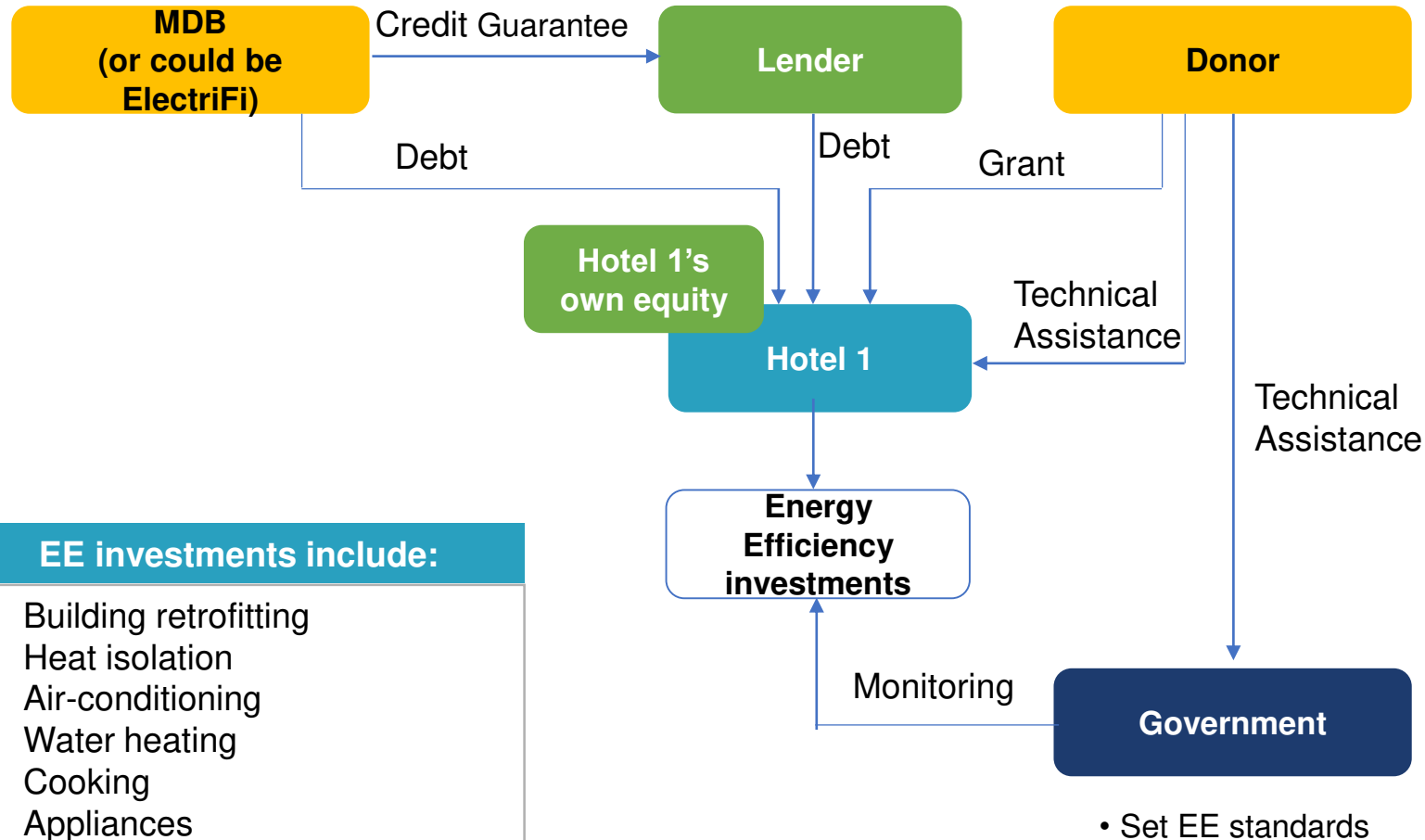
- Presents a strategy and **plan for change**
- Based on defined **barriers**
- Suggests financial instruments, funding sources, Technology implementation and capacity building needs and aggregates them
- Uses as much existing **best practice** as possible
- Defines a **governance & institutional structure**
- Highlights proposed changings in **policy / planning / regulation**

Financing Energy Efficiency in the Tourism Industry (1/2)

Regional Financing Facility

ILLUSTRATION ONLY – NOT APPROVED

Project structure



EE investments include:

- Building retrofitting
- Heat isolation
- Air-conditioning
- Water heating
- Cooking
- Appliances

Key project features

- 1) 55% to 90% Credit Guarantee**
 - Issued by an MDB to enable lenders to provide loans to hotels for Energy Efficiency Investments
- 2) Loans**
 - Provided by MDB, commercial banks or National Development Bank
 - On-balance sheet loans with 100% of funding allocated to pre-agreed EE investments
- 3) Donor provide grant (if required) and TA to:**
 - Hotels to choose the appropriate technologies & financing
 - Governments to organise audits (to receive funds from the facility and qualify for tax deductions)
 - Donor will also finance the energy audits
- 4) May require a tax incentives**
 - Tax income deduction or ECAL recovery

Financing Energy Efficiency in the Tourism Industry (2/2)

Regional Financing Facility

**ILLUSTRATION ONLY –
NOT APPROVED**

Key Considerations

- 1) **Significant Energy Efficiency potential in the hotel industry in the Pacific**
 - One of the most obvious sectors for Energy Efficiency investments in the Pacific
- 2) **Piloting the facility before scaling it up**
 - Hotels must be aware of the different EE options
 - Proof of concept – prove that implementation works and savings can be achieved
- 3) **Fiscal incentives may be required**
 - Could be through income tax reduction, recovery of ECAL and/or lower tariffs
 - Would impact governments' budget
- 4) **Investments unlikely before the end of the Covid 19 crisis**
 - Hotel industry severely hit
 - No certainty on the shape of the recovery in the tourism industry in the Pacific – difficult to forecast the 2021-2022 activity in this sector
 - But some hotels may use the down time to refurbish



Maritime industry is a key part of the tourism sector.



EDFI **ElectriFI**

The EU Electrification Financing Initiative

Accelerating Investment in Renewables, Energy Efficiency & Smart Mobility
in the Pacific Islands

Septembre 2020



The EU Electrification Financing Initiative

Investing in **early stage** private companies and projects offering **sustainable energy** solutions in **emerging markets**

Focusing on **new or improved electricity connections** and on **generation capacity**

Pillars

1

ADDITIONALITY

investing where others can't
Crowding In + Derisking + facilitating

2

NEUTRALITY

No distortion + Exit strategy + Transparency

3

IMPACT

Beneficiaries + technologies + capacity + connections + jobs + CO₂ emissions

4

REIMBURSABILITY

Private sector + Equity to debt + HCY or LCY + EUR 0.5 to 10 M + Long term

Business Models



Mini-grids



Solar Home Systems



Independent Power Producer



Captive Power Plant, C&I



Energy efficiency, Smart mobility & others

The Pacific Regional Window

Amount: EUR 8 millions

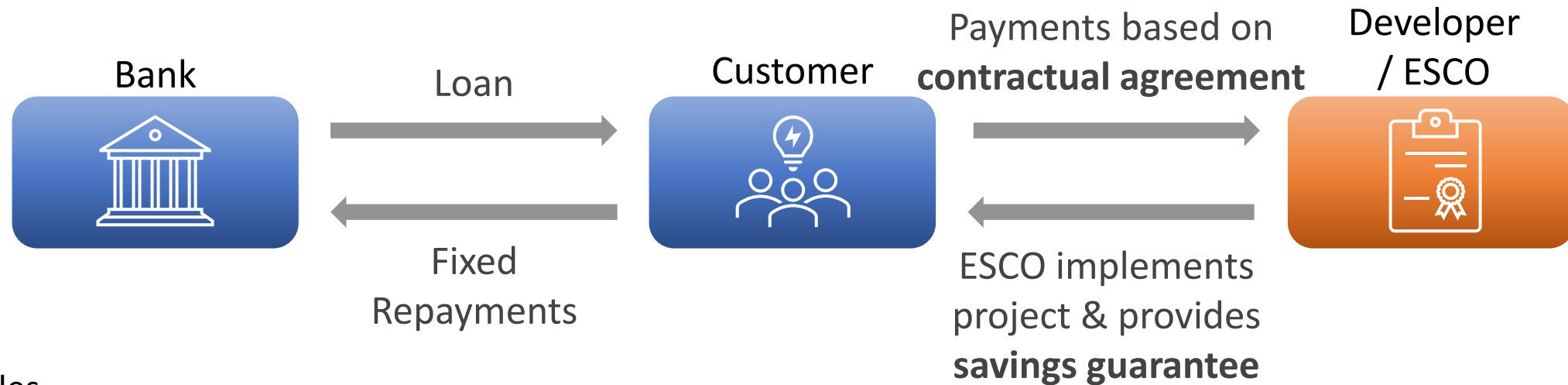
Focus: deal with market barriers and attract new investments in the pacific region

Sectors: Off-grid & on-grid generation, Energy Efficiency projects and smart mobility



ESCO - Guaranteed savings model

- The Customer funds the capex through commercial loan (or equity)
- The ESCO takes on the technical risk and guarantees a certain savings on the Customer's energy bill
- The Customer pays contractually determined fees to the ESCO

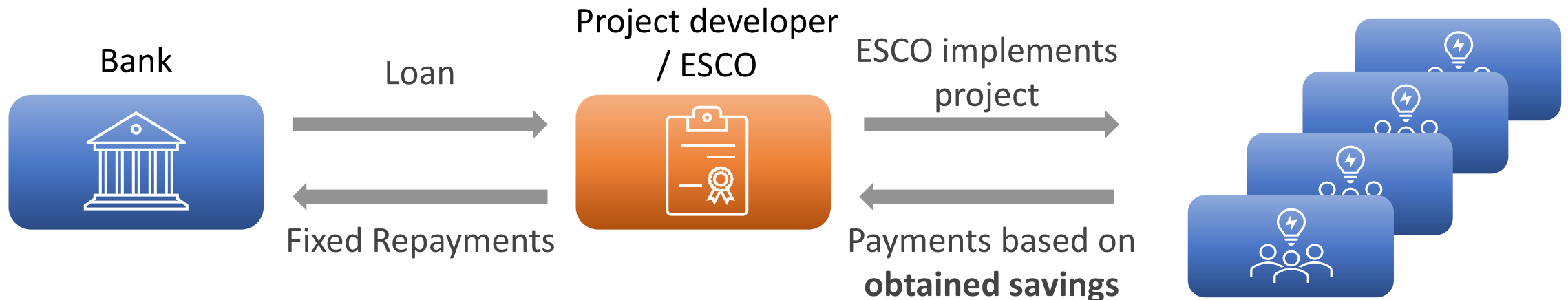


Hurdles

- Access to funding for the Customer
- Low valuation of the Savings Guarantee by the Bank
- Negative impact on the Customer's balance sheet
- Customer's IRR target may not be reached
- Stand alone project not reaching the minimum size for the developer

ESCO - Shared savings model

- ESCO provides financing, project development and implementation costs.
- ESCO assumes both the technical and the credit risk (of the Customer)
- Customer makes payments to the ESCO based on the savings obtained
- ESCO can work with a portfolio of customers

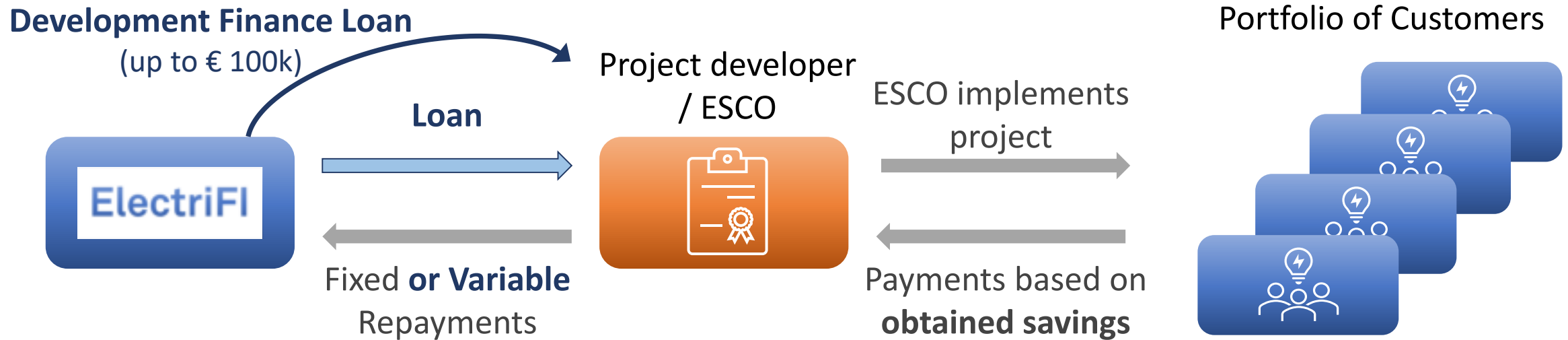


Access to funding remains challenging

Uncertainty associated with the performance of efficiency measures inhibits third-party financing

- ✓ No upfront capital costs
- ✓ No collateral or securities
- ✓ Off-balance sheet

ElectriFI supports **innovative financing models** for energy efficiency and can become the **financing partner** of a Shared Saving Model



Get.invest support
Modelling & Standardized project contracts



Get in touch

Dominiek Deconinck
Fund Manager
d.deconinck@edfimc.eu

Quentin De Hoe
Senior Investment Officer
q.dehoe@edfimc.eu

EDFI Management Company
Rue du Trône 4
BE-1000 Brussels

www.electrifi.eu



PAUL VAN AALST

Team Leader GET.invest Finance Catalyst



GET.invest

Mobilising Investments in Decentralised Renewable Energy

GET.invest is supported by



What is GET.invest ?

- A European programme to support investments in decentralised renewable energy in the African, Caribbean and Pacific region
- Services include market information, a funding database, matchmaking events and access-to-finance advisory by the GET.invest Finance Catalyst
- Delivering on priority initiatives of the European Union and its member states: supported by the European Union, Germany, Sweden, the Netherlands and Austria.



- Hosted on the European multi-donor platform GET.pro and implemented by GIZ

GET.invest Services



Private sector mobilisation

- Information on countries, markets, and financing opportunities
- Matchmaking events
- Partnering with associations

Pipeline development

- Advisory support to projects and companies for accessing financing via the GET.invest Finance Catalyst
- Project documentation development
- Capacity development of key stakeholders



GET.invest Finance Catalyst



Provides four types of support (“à la carte”)



Services

Independent advisory services to projects and business developers, including:

- Reviewing business cases
- Assessing commercial viability
- Capital structuring
- Connecting with funders
- Structuring contracts

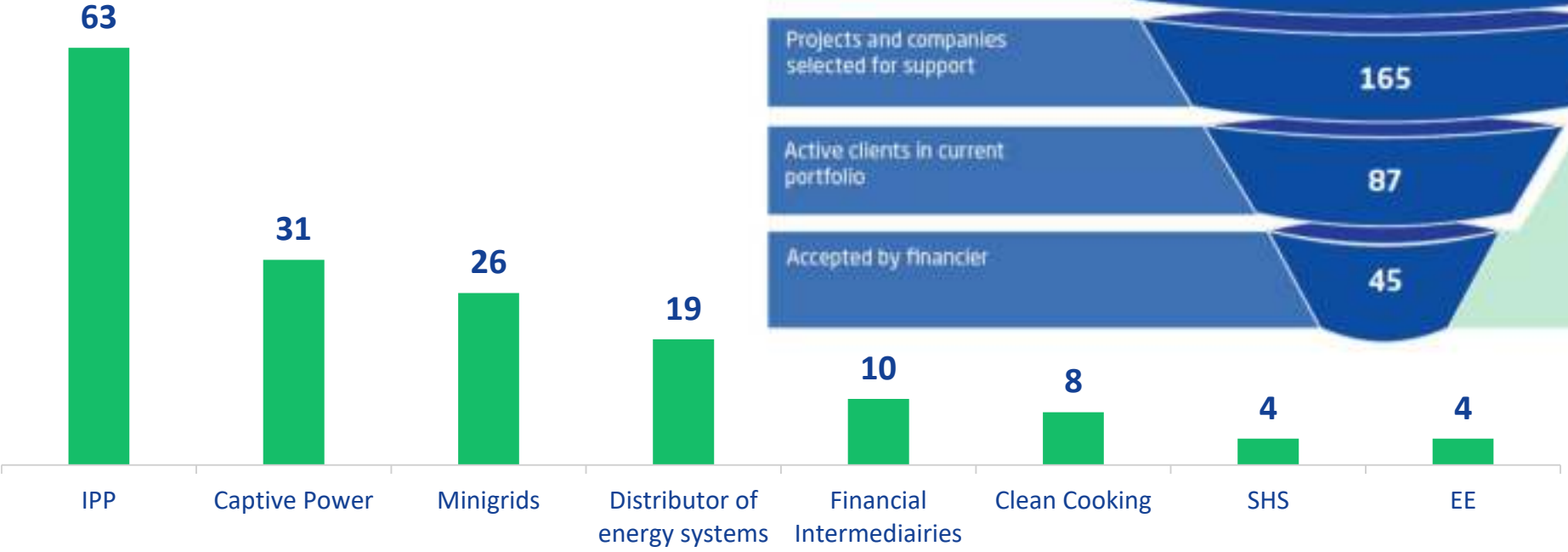
How does it work

- Applications are received and selected through a transparent “level playing field” intake, where added value of support and the viability of the project are assessed
- Scope of support is defined, agreed by both parties and subsequently provided
- Success = financier accepts project for intake
- Project obtains support towards actual financing

Current Portfolio



GET.invest Finance Catalyst



What does GET.invest cover?

On-Grid Electricity

IPP (large)



IPP (small)



Commercial and Industrial Energy



Off-Grid Electricity

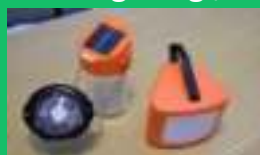
Mini-Grids



Solar Home Systems



Solar Lighting / Lanterns



Non-Electricity

Cooking Energy



Energy Efficiency / Thermal Energy



Liquid Biofuels



Pictures @GIZ

Energy Efficiency (EE)

EE includes applying energy saving measures and renewable energy in homes and for productive use. Examples:

- Solar water heating, energy efficient lights and air-conditioning in homes and hotels
- Charging of Electrical Vehicles (with green energy)
- Solar-powered fruit drying or drip-irrigation

EE-financing often is SME- and off-balance financing (leasing, rent-to-own).

Our team has designed and applied financing products for these.

Our financing network includes dedicated EE-debt and equity providers.

Our Financing Network:



Debt and Equity combined with Grants

- Multitude of different financing options, each with specific modalities
- Usually many financiers involved in one project
- Initial stages of obtaining finance usually highly informal, personal contact
- Our network: many small / new / private actors
- Predominantly dedicated financing instruments for decentralised RE and EE as well as private / family offices
- Only little DFI involvement (mostly due to “ticket” sizes)



Energy Efficiency: Green Housing (Caribbean)



Project Overview

- Green housing development
- First Green Housing affordable development in the region
- Hurricane and otherwise climate-change proof
- Addresses critical shortage of affordable housing

Type of support and potential roadblocks

- Technical and finance expertise
- Blended finance needed due to scale and country size
- Shortlisted Green Climate Fund

**Deep socio-economic
impact, high chance of
success**

Renewable Energy: Water & Sewerage Company (Caribbean)



Project overview

- C&I Installation
- On rooftops, water-basins, sewage ponds and land next to facilities
- Licensing manageable as Company is a parastatal

Type of support and potential roadblocks

- RE-capacity building for a non-core activity
- Finding a private developer to support / lead work towards a financing arrangement
- Early stage project

Feasibility is clear-cut

Interested? Meet the Advisor!

- Contact pacific@get-invest.eu
- Send a brief intro about your venture/project
- Get the opportunity for an intro call with the advisors:
 - GET.invest – Finance Catalyst Advisor
 - ElectriFI – Investment Officer



How to apply directly to Finance Catalyst:

Applications for support can be submitted at:

<https://www.get-invest.eu/finance-catalyst/access>

- Information is treated confidentially;
- Applications are evaluated by two individual experts;
- Applications are evaluated in rounds.

Thank you for your attention!



PAUL VAN AALST

Team leader GET.invest Finance Catalyst

E-mail: paul@finance-catalyst.eu



www.get-invest.eu



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Clay Energy

Verbal intervention on the current experiences of the private sector in the region in energy efficiency

ACCELERATING INVESTMENTS IN RENEWABLE ENERGY, ENERGY EFFICIENCY & SMART MOBILITY IN PACIFIC ISLANDS

Webinar II: Energy Efficiency

Regional Efforts on building investor confidence in EE in the PICs

SOLOMONE FIFITA

PACIFIC CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY (PCREEE)

Background

- Years of recognizing the need for clarity, stability, coherence etc in order to support progress in the Energy sector of the PICs
- 2017 **Pacific Energy Ministers** called for an **acceleration** in the adoption and enforcement of energy sector laws and regulatory frameworks



Progress - completed

- **2019 Pacific Energy Ministers** were pleased to note the progress:
- Nauru energy road map (2018)
- Samoa EE Act (2017), EE regulation (2018) and draft energy management Bill (2018)
- FSM Energy Master Plan (2018)
- RMI Electricity road map (2018), RMI Energy Office Act (2018)
- Vanuatu Energy Efficiency of Electrical Appliances, Equipment and Lighting Products Regulation (2017)
- Cook Is Energy (Amendment) Act 2012
- Palau Energy Administration Law 2015



Progress – ongoing

- Tonga Energy Sector Bill
- Kiribati Energy sector Bill
- Niue Electricity Supply Act 1960
- Review of the Tuvalu Petroleum Ordinance 1965
- draft MEPSL legislations in Cook Islands, Kiribati, and Papua New Guinea
- Solomon Islands National Energy Policy
- Review of the Tuvalu National Energy Policy



Pacific Appliance Labelling & Standards

- Led by Secretariat of the Pacific Community (SPC)
- Implementation timeframe: 2012 – June 2019
- Donor: Government of Australia
- Participating PICs: Fiji, Cook Islands, Kiribati, Niue, PNG, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu



What's included?

- Standards and energy labelling of electrical appliances (**refrigerators, freezers, air conditioning units and lights**) as used in Australia and New Zealand
- Can be extended to other applications such as 'solar water heaters', etc
- Public awareness activities on energy labelling and standards are also included, among other measures such as capacity building of key stakeholders
- Leveraging financing to scale up (funding by Australia ended in 2019, funding proposals ongoing)

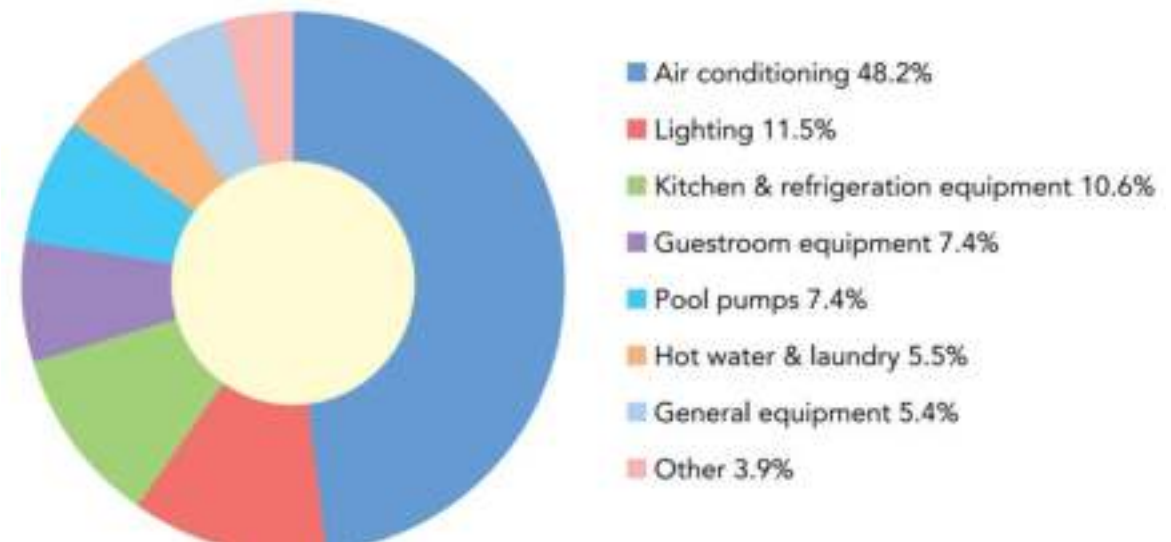


Status?

Country	Legislation
Fiji	Have adopted minimum energy performance standards and have started enforcing the standard
Samoa	
Solomon Is	
Tuvalu	
Vanuatu	
CKI, KIR, NIUE, TOP, PNG	Have draft legislations in place

Why is this important?

- Avoid flooding market with sub-quality products
- Ensure key stakeholders are **confident** with technology and trust that savings will materialise (i.e., hotels, etc) → this reduces the perceived risk during the investment process



Role of the Regulator

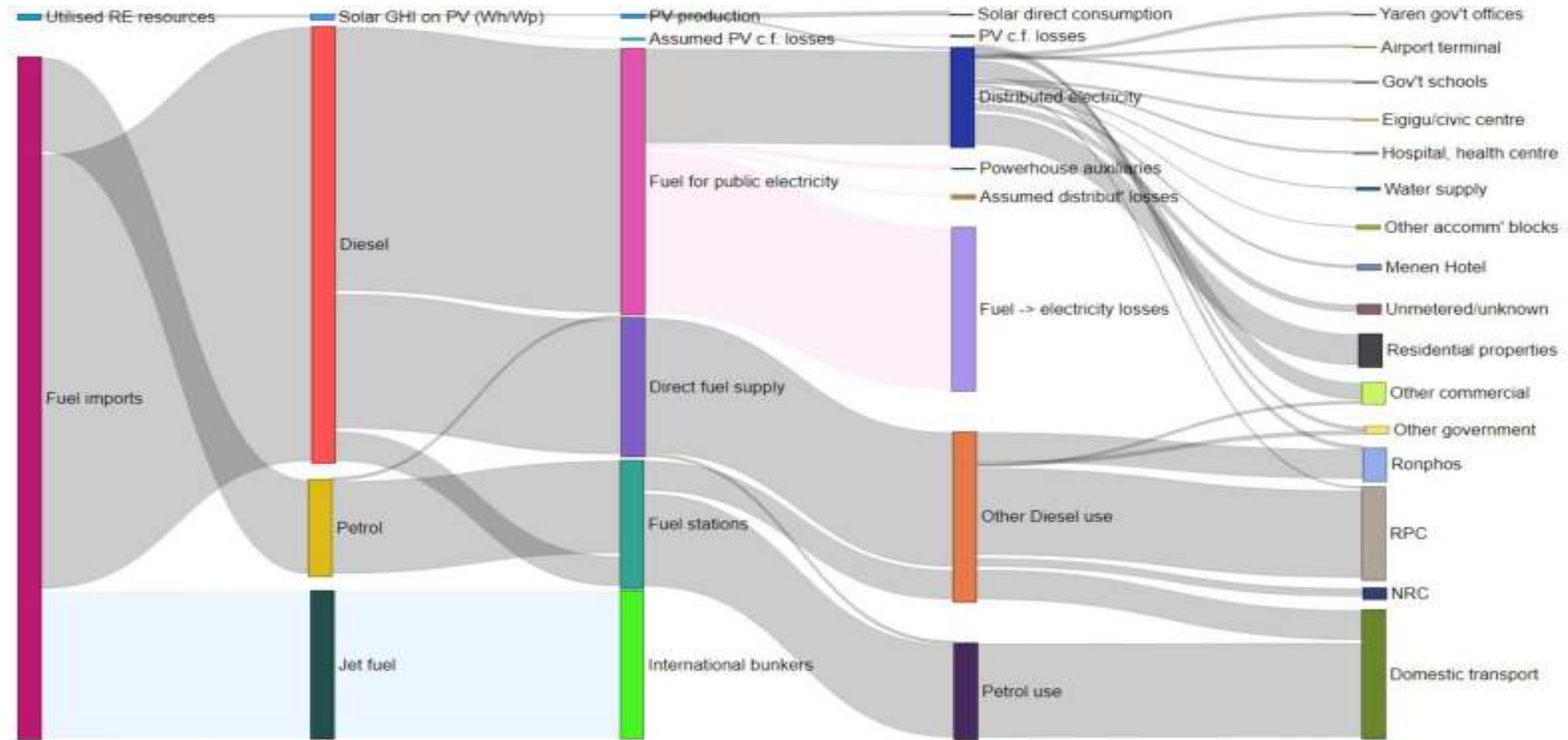
- Fiji, PNG, Samoa, Tonga & Vanuatu
- Others are in their draft legislations
- TAs going into the Regulators, including OPERA
- Standards & Losses



Energy Efficiency Opportunities A scoping study in Nauru

Trevor Nash, Consulting Services Manager, Energy Solution Providers (NZ)

Nauru Energy Use Profile



Nauru Energy Balance by TJ (some small energy flows not shown for clarity)

Nauru Energy Efficiency Opportunities



NZ-MFAT EE Project - Phase 1: Identify and rank energy efficiency opportunities

- Visits made in late 2019
- A 'Contest of Ideas'
- Ranked by \$ investment per L/yr diesel saved
- Grouped into Tiers

Tier 1 projects (5) are needed to support roll-out of the Tier 2 projects

Tier 2 projects (40) were well-ranked and generally recommended by the group, subject to funding allocation

Tier 3 projects (5) were initially evaluated, but were either replaced with a more practicable concept, or offered a lower benefit than the Tier 2s

Tier 4 projects (20) were concepts needing further evaluation

The screenshot shows a detailed spreadsheet for project evaluation. It includes sections for 'Project Summary', 'Benefits', 'Risks', 'Energy Savings', and a summary table. The summary table is as follows:

Project Name	Investment (\$)	Annual Savings (\$)	Payback (Years)	Total Annual Savings (\$)	Payback (Years)
Project A	100,000	20,000	5	200,000	5
Project B	150,000	30,000	5	300,000	5
Project C	200,000	40,000	5	400,000	5
Project D	250,000	50,000	5	500,000	5
Project E	300,000	60,000	5	600,000	5
Total	800,000	160,000	5	1,600,000	5

Tier 1 & 2 savings of 9 GWh/y, average payback ~1.5y
2x better payback than new solar PV (or 4x on PV + BESS)

Best paybacks in:

- Air conditioning controls
- Energy Management Programmes, including Monitoring & Targeting to eliminate energy wastage
- Appliance efficiency standards
- Technician training
- Lighting upgrades to LED at selected locations

Large savings opportunities in:

- Residential appliance upgrades
- Lighting upgrades
- HVAC upgrades



Nauru Airport Energy Metering - Main Incomer

978K

Active Energy (kWh)

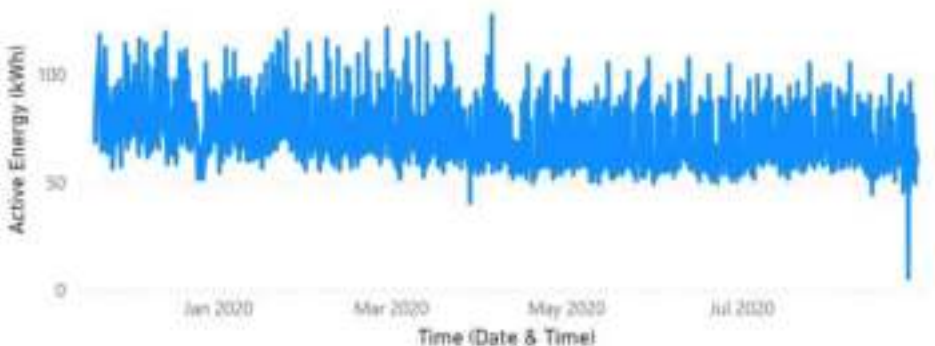
Time (Date & Time)

18/11/2019 31/08/2020



Nauru Airlines
Airline of the Central Pacific
Schedule Effective 18th September 2020

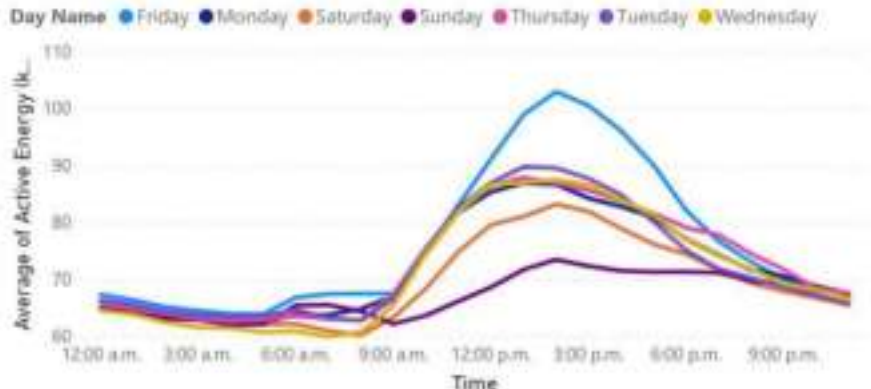
Active Energy (kWh) by Time (Date & Time)



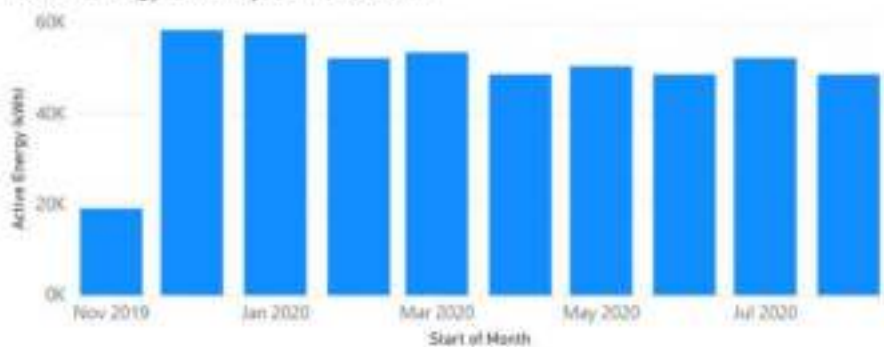
Average of Power Factor by Time (Date & Time)



Average of Active Energy (kWh) by Time and Day Name



Active Energy (kWh) by Start of Month



Brisbane - Nauru					
Flight	Day	Origin	Destination	Depart	Arrive
DN001	Fri 18-Sep-20	Brisbane	Nauru	8:00am	1:00pm
DN002	Fri 2-Oct-20	Brisbane	Nauru	8:00am	1:00pm
DN003	Fri 16-Oct-20	Brisbane	Nauru	8:00am	1:00pm
DN004	Fri 30-Oct-20	Brisbane	Nauru	8:00am	1:00pm
DN005	Fri 13-Nov-20	Brisbane	Nauru	8:00am	1:00pm
DN006	Fri 27-Nov-20	Brisbane	Nauru	8:00am	1:00pm
DN007	Fri 11-Dec-20	Brisbane	Nauru	8:00am	1:00pm
DN008	Tue 29-Dec-20	Brisbane	Nauru	8:00am	1:00pm
DN009	Fri 8-Jan-21	Brisbane	Nauru	8:00am	1:00pm
DN010	Fri 22-Jan-21	Brisbane	Nauru	8:00am	1:00pm
DN011	Fri 5-Feb-21	Brisbane	Nauru	8:00am	1:00pm
DN012	Fri 19-Feb-21	Brisbane	Nauru	8:00am	1:00pm
DN013	Fri 4-Mar-21	Brisbane	Nauru	8:00am	1:00pm
DN014	Fri 18-Mar-21	Brisbane	Nauru	8:00am	1:00pm
Nauru - Brisbane					
Flight	Day	Origin	Destination	Depart	Arrive
DN015	Fri 18-Sep-20	Nauru	Brisbane	1:00pm	6:25pm
DN016	Fri 2-Oct-20	Nauru	Brisbane	1:00pm	6:25pm
DN017	Fri 16-Oct-20	Nauru	Brisbane	1:00pm	6:25pm
DN018	Fri 30-Oct-20	Nauru	Brisbane	1:00pm	6:25pm
DN019	Fri 13-Nov-20	Nauru	Brisbane	1:00pm	6:25pm
DN020	Fri 27-Nov-20	Nauru	Brisbane	1:00pm	6:25pm
DN021	Fri 11-Dec-20	Nauru	Brisbane	1:00pm	6:25pm
DN022	Tue 29-Dec-20	Nauru	Brisbane	1:00pm	6:25pm
DN023	Fri 8-Jan-21	Nauru	Brisbane	1:00pm	6:25pm
DN024	Fri 22-Jan-21	Nauru	Brisbane	1:00pm	6:25pm



Nauru Public Health Centre Energy Metering - Main Incomer

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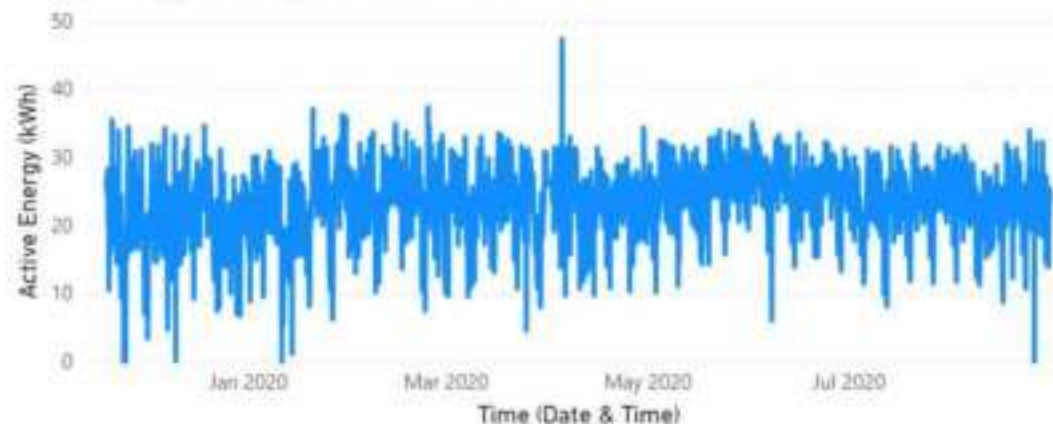
Active Energy (kWh)

Time (Date & Time)

19/11/2019 31/08/2020

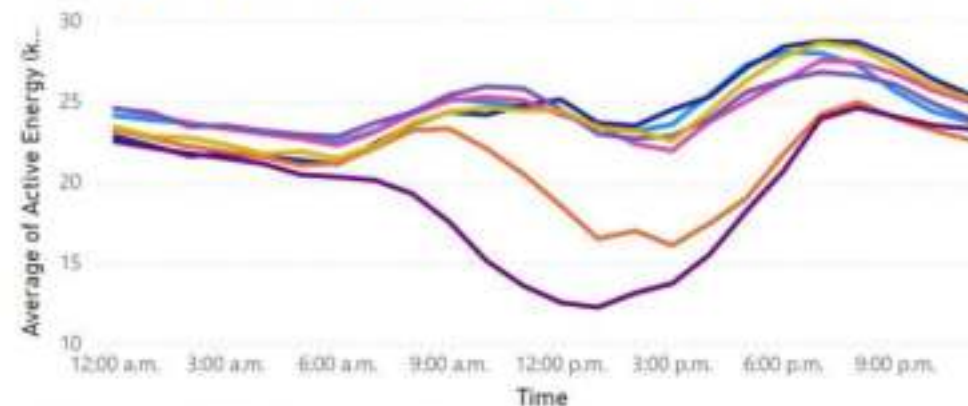


Active Energy (kWh) by Time (Date & Time)

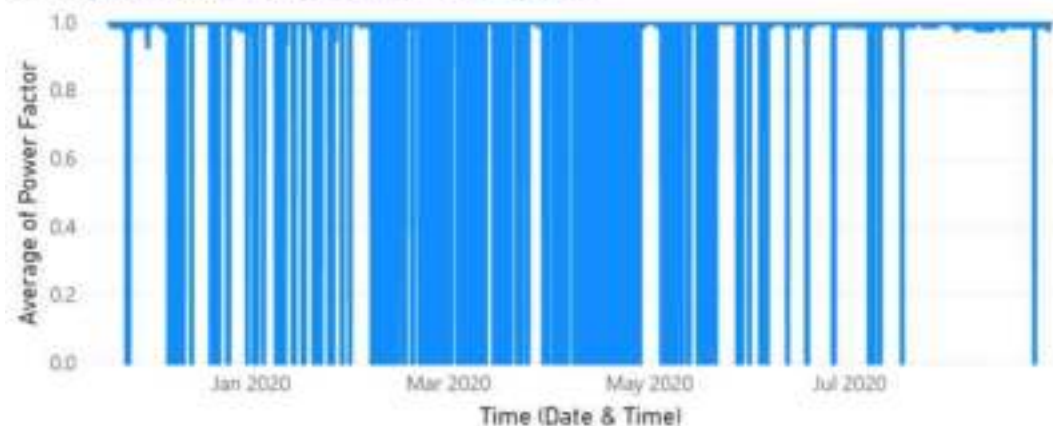


Average of Active Energy (kWh) by Time and Day Name

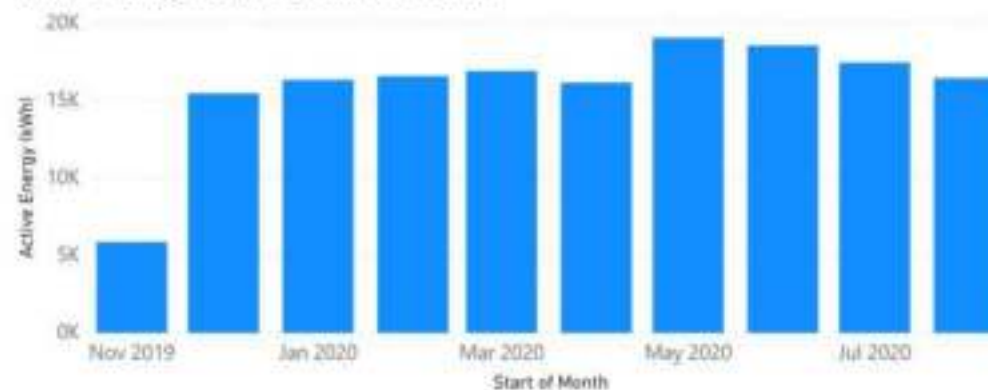
Day Name ● Friday ● Monday ● Saturday ● Sunday ● Thursday ● Tuesday ● Wednesday



Average of Power Factor by Time (Date & Time)



Active Energy (kWh) by Start of Month



Perspectives

1. Energy Savings opportunities offer **good paybacks**, many at no or low cost
2. **Energy Roadmaps** often underplay Energy Efficiency (Megawatts vs 'Negawatts')
3. Eliminate energy wastage by **Monitoring & Targeting**
4. Manage system controls through **Continuous Commissioning** & minor capex
5. Build local capability by supporting **Energy Management Programmes** and **Training**
6. **Capex upgrades** to buildings, HVAC, lighting & appliances
7. Engage locally in **Innovation Partnerships** spanning technology, management & people-based aspects. Deploy **Adaptive Management**.

ESCO platform opportunities via '**Pay-as-you-go**' schemes with local partners?

- Partner with the **Utility Company** to reach Electricity customers i.e. pay off funded EE projects via an add-on to electricity bills
- Partner with **Government** to reach its Staff e.g. pay off funded appliance upgrades via salary deduction
- Good projects/schemes would be net positive for the recipients.





ADB

Verbal intervention on the role of financiers such as ADB in de-risking investments in energy efficiency

Webinar Series: Accelerating Investments in Renewable Energy, Energy Efficiency and Smart Mobility in the Pacific Islands

Webinar 2: Energy Efficiency

Thank you for joining us!

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29 Sept: Smart Mobility



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